

REMARKS

I. General

Claims 1 and 3-20 are pending in the present application. Claims 1 and 3-8 have been allowed. The outstanding issues in the current Office Action are as follows:

- Claims 9, 10, 12, and 16-20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zimmerman* (U.S. Patent No. 5,185,667) in view of *Koyanagi* (U.S. Patent No. 6,898,742);
- Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zimmerman* in view of *Koyanagi*, and further in view of *Sharp* (“GP1S36 Tilt Detecting Photointerrupter.”); and
- Claims 13-15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zimmerman* in view of *Koyanagi* in further view of *Tretter* (U.S. Patent No. 5,901,253).

Applicant respectfully traverses the outstanding claim rejections and requests reconsideration and withdrawal in light of the remarks presented herein.

II. Claim Rejections Under 35 U.S.C. § 103

To establish a prima facie case of obviousness under 35 U.S.C. § 103(a), the references relied upon must be analogous prior art. M.P.E.P. § 2141.01(a). In order words, the references “must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the invention was concerned.” *In re Oetiker*, 977 F.2d 1443, 1446 (Fed. Cir. 1992), cited in M.P.E.P. § 2141.01(a).

In addition, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the references’ teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. § 2143.

A. Rejection of Claims 9, 10, 12, and 16-20

Claims 9, 10, 12, and 16-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zimmerman* in view of *Koyanagi*. Office Action at page 2. Applicant traverses the rejection and asserts that the claims are allowable.

1. Non-Analogous Prior Art

In order to reject claims 9, 10, 12, and 16-20, the Office Action relies, in part, upon *Koyanagi*. Applicant respectfully points out that *Koyanagi* is non-analogous prior art. For example, claim 9 recites “[a]n image orientation correction system” Meanwhile, *Koyanagi* relates to:

a system and method for performing automatic deskew tuning and alignment across high-speed, parallel interconnections in a high performance digital system to compensate for inter-bit skew. *Koyanagi* at col. 1, lines 21-25.

In other words, claim 9 is concerned with image processing, whereas *Koyanagi* deals with data communications over parallel interconnections. *Koyanagi* is non-analogous art because its general scope is outside the pertinent field of endeavor of the present invention, and because the subject matter disclosed in *Koyanagi* is irrelevant to the particular problem with which the present inventor is involved. *State Contracting & Eng'g Corp. v. Condotte America, Inc.*, 346 F.3d 1057, 1069 (Fed. Cir. 2003), *cited in* M.P.E.P. § 2141.01.

The Office Action seems to mistakenly assume that, just because *Koyanagi* uses the term “deskew,” it must involve an “image skew correction” system. However, Applicant respectfully points out that the term “skew,” as used in *Koyanagi*, refers to “*the skew of the data arrival time at the receiving end of each signal line*” *Koyanagi* at col. 1, lines 31-34 (emphasis added). Contrary to the Office Action’s assertions, *Koyanagi* is not “in the area of image skew correction.” In fact, even the most cursory glance at *Koyanagi* reveals that *Koyanagi*’s invention is intended “for use in high-speed, parallel interconnections for digital systems, including high performance microprocessor systems, memory systems, and input/output (“I/O”) systems.” *Koyanagi* at col. 1, lines 21-25. Therefore, Applicant respectfully asserts that *Koyanagi* is not in the field of Applicant’s endeavor, nor is it reasonably pertinent to the particular problem with which the present invention is concerned.

Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 rejection of record with respect to claims 9, 10, 12, and 16-20.

2. Lack of All Claimed Limitations

Claim 9 recites “a tilt determining mechanism configured to automatically sense orientation errors of received images.” The Office Action asserts that *Zimmermann* teaches “a tilt determining mechanism configured to sense orientation errors of received images.” Office Action at page 3. Applicant respectfully disagrees. At the cited portion, *Zimmermann* teaches that:

[t]he image transform processors are controlled by the microcomputer and control interface 5. The microcomputer control interface provides initialization and transform parameter calculation for the system. *Zimmermann* at col. 3, lines 30-39.

The cited-to portion does not teach or suggest a tilt determining mechanism. In fact, *Zimmermann* at numerous places teaches that tilt transformations are made according to a manual control input by a joystick or other input. See, e.g., *Zimmermann* at col. 8, lines 15-20; col. 3, lines 39-45. *Koyanagi* does not teach or suggest a tilt determining mechanism, as recited in claim 9.

Furthermore, contrary to the Examiner’s assertions, *Zimmermann* does not teach or even suggest “sensing orientation errors,” as also required by claim 9. Instead, *Zimmerman* teaches performing two-dimensional mapping of an image acquired through a fisheye lens. *Zimmerman* at col. 3, lines 25-35. Moreover, *Zimmerman* discloses that one of the “keys to the success of the invention” is that “the required mathematical transform is predictable based on the lens characteristics.” *Zimmerman* at col. 4, lines 20-21. Therefore, rather than sensing an orientation error, *Zimmerman* mathematically corrects an image perspective between two known coordinate systems. See *Zimmerman* at col. 4, lines 22-47. *Koyanagi* does not teach or suggest a tilt determining mechanism configured to sense orientation errors of received images, as recited in claim 9.

Claim 16 recites “an orientation sensor automatically identifying an orientation of said image sensor with respect to said image captured by said image sensor.” The Office

Action asserts that *Zimmermann* meets the aforementioned element. Office Action at page 4. However, the cited-to portion of *Zimmermann* teaches image transform processors and a control interface for transform parameter calculation. *Zimmermann* at col. 3, lines 30-39. In fact, *Zimmermann* does not disclose identifying an orientation of an image sensor, but only the transformation of a distorted image acquired through the intentional use of a fish-eye camera lens. *Zimmermann* at Abstract. *Koyanagi* does not teach or suggest an orientation sensor for automatically identifying the orientation of an image sensor with respect to an image captured by the image sensor, as recited in claim 16.

Moreover, with respect to claims 9 and 16, the Office Action admits that *Zimmerman* does not teach or suggest “details on the tilt determining mechanism,” and relies upon *Koyanagi* as teaching an “automatic deskew system and method.” Office Action at pages 2-4. However, as noted above, *Koyanagi* discloses a system for communicating data over parallel interconnections where “skew” is “*the skew of the data arrival time* at the receiving end of each signal line” *Koyanagi* at col. 1, lines 31-34 (emphasis added). As such, it does not teach or suggest “a tilt determining mechanism configured to automatically sense orientation errors of received images,” as recited in claim 9, nor does it teach or suggest “an orientation sensor automatically identifying an orientation of said image sensor with respect to said image captured by said image sensor,” as recited in claim 16.

Therefore, the cited references, taken alone or in combination, fail to teach or suggest every feature of claims 9 and 16. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection with respect to claims 9 and 16.

Dependent claims 10 and 12 depend upon claim 9, and thus inherit all the limitations of that independent claim. Dependent claims 17-20 depend upon claim 16, and thus inherit all the limitations of that independent claim. Consequently, the combination of *Zimmerman* and *Koyanagi* also fails to teach or suggest all of the limitations of dependent claims 10, 12, and 17-20. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of record with respect to claims 10, 12, and 17-20.

3. Improper Motivation

In attempting to provide the requisite motivation for the proposed combination, the Office Actions states that “Zimmerman and Koyanagi are combinable because they are both from [sic] in the area of image skew correction.” Office Action at page 3. Applicant respectfully disagrees. As previously noted, *Koyanagi* is not “in the area of image skew correction,” but it instead concerns a system for communicating data over parallel interconnections. Applicant respectfully asserts that, not only does the prior art not suggest the desirability of combination, but *Zimmerman*’s image distortion correction system cannot be combined or modified to utilize *Koyanagi*’s system in any meaningful manner.

Furthermore, even assuming, *arguendo*, that these references could be combined, that alone would not render the resultant combination obvious unless the prior art also suggested the desirability of the combination. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990), *cited in* M.P.E.P. § 2143.01. The Office Action asserts that “[i]t would have been obvious to one of ordinary skill in the art, at the time the invention was made, to incorporate automatic deskewing technique taught in *Koyanagi* into the tilt determining mechanism configured to sense orientation errors of received images in the [sic] *Zimmermann*’s image orientation correction system.” Office Action at page 3. However, there is no indication of a need to include an “automatic deskew system and method for use in high-speed, parallel interconnections for digital systems” as taught in *Koyanagi* in *Zimmermann*’s image distortion correction system.

Therefore, the prior art does not suggest the desirability of the combination, and the Office Action has not shown otherwise. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of record with respect to claims 9, 10, 12, and 16-20.

B. Rejection of Claim 11

Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zimmerman* in view of *Koyanagi* and *Sharp*. Office Action at page 4. Applicant traverses the rejection and asserts that the claim is allowable.

1. Non-Analogous Prior Art

In order to reject claim 11, the Office Action again relies, in part, upon *Koyanagi*. Applicant reasserts that *Koyanagi* is non-analogous prior art. *Koyanagi* is not in the field of Applicant's endeavor, nor is it reasonably pertinent to the particular problem with which the present invention is concerned. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 rejection of record with respect to claim 11.

2. Lack of All Claimed Limitations

As previously noted, the combination of *Zimmerman* and *Koyanagi* fails to teach or suggest elements required by independent claim 9. The Office Action does not rely upon *Sharp* as teaching or suggesting those elements, and Applicant asserts that *Sharp* does not teach or suggest such elements. Therefore, the combination of *Zimmerman*, *Koyanagi*, and *Sharp* fails to teach or suggest all of the limitations of independent claim 9. Claim 11 depends from claim 9, and thus inherits all the limitations of that independent claim. Consequently, the combination of *Zimmerman*, *Koyanagi*, and *Sharp* also fails to teach or suggest all of the limitations of dependent claim 11. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of record with respect to claim 11.

3. Improper Motivation

Applicant reasserts that *Zimmermann's* image distortion correction system cannot be combined or modified to utilize *Koyanagi's* system for communicating of data over parallel interconnections in any meaningful manner. Applicant further asserts that there is no motivation, either in the teachings of the references or in the knowledge of persons of ordinary skill in the art, to combine the image distortion correction system of *Zimmermann* with the tilt detector of *Sharp*.

For example, *Zimmermann's* system compensates for distortion of an image acquired through a motionless fish-eye camera, such as those used in security or surveillance applications. *Zimmermann* at Abstract; col. 4, lines 12-47. Meanwhile, *Sharp's* tilt sensor is an electro-mechanical device that determines motion and/or changes in the physical orientation of a camera. *Sharp* at Figure on page 3. Because *Zimmerman* requires a

motionless camera, there is simply no reason, suggestion, or motivation to combine it with the tilt sensor of *Sharp*, which requires movement. Also, it is well known that references cannot be combined where a reference teaches away from their combination. *In re Grasselli*, 713 F.2d 731, 743 (Fed. Cir. 1983), *cited in* M.P.E.P. § 2145. *Zimmerman*'s requirement that there be no moving parts teaches away from *Sharp*'s tilt sensor, which includes a moving ball. *Sharp* at Figure 2, page 2.

Moreover, the Examiner states that “[i]t would have been obvious . . . to incorporate tilt sensor taught in *Sharp* into the *Zimmermann*'s tilt determining mechanism because *Zimmermann* already teaches tilt determining and correcting mechanism” Office Action at page 4. Applicant respectfully disagrees with the Examiner's characterization of the cited references. Nonetheless, Applicant respectfully points out that, even under the Examiner's own rationale, there would be no reason to combine *Zimmermann* with *Sharp* because *Zimmermann* alone would already teach a tilt determining mechanism, and thus no further teaching would be needed.

Therefore, the motivation put forth by the Examiner for the combination of *Zimmermann* with *Koyanagi* and *Sharp* is improper. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 rejection of claim 11.

C. Rejection of Claims 13-15

Claims 13-15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over *Zimmerman* in view of *Koyanagi* and *Tretter*. Office Action at page 5. Applicant traverses the rejection and asserts that the claims are allowable.

1. Non-Analogous Prior Art

In order to reject claims 13-15, the Office Action still relies, in part, upon *Koyanagi*. Applicant reasserts that *Koyanagi* is non-analogous prior art. *Koyanagi* is not in the field of Applicant's endeavor, nor is it reasonably pertinent to the particular problem with which the present invention is concerned. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 rejection of record with respect to claims 13-15.

2. Lack of All Claimed Limitations

The combination of *Zimmerman* and *Koyanagi* fails to teach or suggest elements required by independent claim 9. The Office Action does not rely upon *Sharp* as teaching or suggesting those features, and Applicant asserts that *Tretter* does not teach or suggest such features. Therefore, the combination of *Zimmerman*, *Koyanagi*, and *Tretter* fails to teach or suggest all of the limitations of independent claim 9. Claims 13-15 depend from claim 9, and thus inherit all the limitations of that independent claim. Consequently, the combination of *Zimmerman*, *Koyanagi*, and *Tretter* also fails to teach or suggest all of the limitations of dependent claims 13-15. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103(a) rejection of record with respect to claims 13-15.

3. Improper Motivation

Applicant reasserts that *Zimmermann's* image distortion correction system cannot be combined or modified to utilize *Koyanagi's* system for communicating of data over parallel interconnections in any meaningful manner. Applicant further asserts that there is no need to include an "automatic deskew system and method for use in high-speed, parallel interconnections for digital systems," as taught in *Koyanagi*, in *Zimmermann's* image distortion correction system. *Koyanagi*, col. 1, lines 21-24. Therefore, the prior art does not suggest the desirability of the combination, and the Office Action has not shown otherwise.

Applicant also asserts that the skew detection system of *Tretter* cannot be combined or modified to utilize the distortion correction system of *Zimmermann* in any meaningful manner. *Tretter* discloses correcting a skew angle of an image acquired by a scanner, whereas *Zimmermann's* system compensates for distortion of an image acquired through a fish-eye camera lens. *Zimmermann* at col. 4, lines 12-47; *Tretter* at Abstract. However, there is no indication in *Tretter* that the tilted image acquired by the scanner contains any optical distortion such as the one caused by the hemispherical field-of-view of *Zimmermann's* camera lens. Hence, there is no reason, suggestion, or motivation to combine these references.

Moreover, the Examiner states that "[i]t would have been obvious . . . to incorporate tilt determining mechanism . . . taught in *Tretter* into *Zimmerman* which already teaches software implemented tilt determining mechanism" Office Action at page 4. Applicant

respectfully disagrees with the Examiner's characterization of the cited references. Nonetheless, Applicant respectfully points out that, even under the Examiner's own rationale, there would be no reason to combine *Zimmermann* with *Sharp* because *Zimmermann* alone would already teach a tilt determining mechanism, and thus no further teaching would be needed.

Therefore, the motivation put forth by the Examiner for the combination of *Zimmermann* with *Koyanagi* and *Tretter* is improper. Accordingly, Applicant respectfully requests that the Examiner withdraw the 35 U.S.C. § 103 rejection of claims 13-20.

III. CONCLUSION

In view of the above, Applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-2025, under Order No. 10005753-1 from which the undersigned is authorized to draw.

Dated: April 10, 2006

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service as Express Mail, Airbill No. EV482725163US, on the date shown below in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: April 10, 2006

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